

FlexiHeatFire

The FlexiHeatFire is an indigenously developed horizontal cum vertical split-type furnace, capable to generate standard temperature-time curves as per ASTM E119-18a and other user-defined fire scenarios corresponding to temperature-time curves. It can generate temperatures upto 1100°C at three separate zones in a controlled manner on any identified structural components. It has been designed to cater for the requirements of thermo-mechanical loading of beam and column members with a higher rate of heating and any other structural and non-structural components with or without high-temperature protective coatings or insulations. A PC installed with the application software would provide the user interface, enabling the user to control, record and plot the graphs.

Features / Highlights

- Capable of generating standard ASTM E-119 temperature-time curves or any user-defined fire scenarios corresponding temperature-time curves
- Horizontal positioning for beam tests and vertical positioning for column tests
- Effective heating dimensions 1400 x 1200 x 650mm
- Overall size: 3000mm x 2650mm x 3000mm
- PC equipped with interface software and temperature control system
- Data acquisition through software
- Safe, reliable, repeatable and cost-effective
- Easy to operate and environment friendly
- Safety: Over temperature and overload protection

Technical Details

- Capable of generating temperature up to 1100°C at three separate zones in a controlled manner
- Four numbers of K-type thermocouples for measuring temperature in each zone
- Heating rate: 5°C/min to 110°C/min
- Maximum operating temperature: 1100°C
- The furnace can be positioned either horizontally or vertically
- Double layer mild steel case with air cooling to ensure maximum energy saving and to keep furnace surface temperature < 60 °C
- A PC installed with the graphical user interface, enabling the user to control, record and plot the graphs

Applications

- Standard ASTM E-119 temperature-time curve exposure to structural and non-structural elements
- Assessing thermo-mechanical behaviour of various components
- Assessing behaviour of members with various thermal-resistant coatings and insulators



Horizontal Mode: for testing of beam members



Vertical Mode: for testing of column members



Heater arrangements

Status of Technology

- Standardized through tests by certified third-party

Future Plan

- Patent filing
- Technology commercialization



For further details:

Director, CSIR-Structural Engineering Research Centre, CSIR Campus, Taramani, Chennai - 600 113.

Tel.: 91-44-22549201; director@serc.res.in; <http://serc.res.in>

 <https://www.facebook.com/csirserc>

 https://twitter.com/csir_serc